

WHAT OF THE *PLANIDIA*?

By TARLTON RAYMENT, Melbourne.

"Well, just what are Planidia?"

They are extraordinary little creatures, as I shall show you presently. I had not hitherto been fortunate enough to discover any on a bee until Norman W. Rodd sent along a very fine micro-mount of the mouth-parts.



Planidia on Maxillae (left) and Palpi (right) of a Wild Bee,
Paracolletes crassipes.

Photo-micrographs: Tarlton Rayment.

The specimens are so beautifully prepared that I could not refrain from making a photo-micrograph or two of these unusual stages of the parasites. You will see they are more or less cigar-shaped, and attached in numbers to the "tongue." The superficial aspect suggests the puparia of certain parasitic flies (see *A Cluster of Bees*, p. 547).

Rodd caught the host at Patonga Beach, but perhaps you do not know the place, so permit me to tell you that it lies directly opposite Hawkesbury, New South Wales, whence one can take a stout little launch for the beach. I know it requires a stout launch at certain seasons, for I have crossed over on a rough day.

My correspondent spends his holidays there, for it is a small but altogether delightful resort. Hunting for a few indigenous bees, Norman collected a red-legged earth-digging bee, *Paracolletes crassipes* F. Smith, and in the glissa and palpi are dozens of *Planidia*.

Just how the Planidia reached the mouth-parts of the bee I do not know, but I suggest that they congregate, like the legged triungulinid larvae of the "Blister Beetles," in a flower, and await the arrival of the host. I cannot, in the absence of the adults, determine the species, and they are rarely found. So far as my memory goes, this is the first record of Planidia on any Australian bee. Let us, then, award Norman Rodd full credit for his interesting discovery.

From Bugnion's work I learn that the tiny females of *Pseudogonatos liahai* have no ovipositor, and the microscopic eggs pour forth in a veritable flood. H. S. Smith, in his studies of *Perilampus* (parasitic wasps), informs us that many are as small as 0.1 mm. Some females deposit their eggs—three to four thousand of them—on the leaves of plants, and the young hatch there. (The Meloid beetles, parasites in the nests of certain wild bees, also deposit immense numbers of eggs.)

However, when a suitable host arrives, the larvae become highly excited, and attach themselves in dozens to the unfortunate wasp or bee. The young develop, and pupate *in situ*. Later they drop off, and soon after emerge as adults.

The late Professor William Morton Wheeler found many ants heavily infested with numbers of Planidia, and other authors have observed the parasites on wasps of several species. They appear to be prevalent in America, but are seldom reported in Australia.

Wheeler says the chalcid wasps, with their ovipositors, are not so primitive as Bugnion's species, and that many naturalists have observed the resemblance of hymenopterous Planidia to the triungulinid larvae of the oil or blister beetles, which also have remarkable phases of development. The young emerge from eggs, deposited on plants, and await the arrival of a host, perhaps a bee. Clutching the hairy fleece, the legged triungulins are carried off to the bee's nest, where they pass through a hyper-metamorphosis before the true legless metamorphic stage is accomplished.

REFERENCES

- Bugnion, S.: *La Structure Anatomique du Trigonalis Halmi, Schweiz. Ent. Ges.* 12, 1912.
 Hohngren, N.: *Termitenstudien*. (4 parts), 1909-13.
 Wheeler, William Martin: *Social Insects*.
 Smith, H. S.: "Chalcidoid Genus *Perilampus* and its Relations to the Problem of Parasite Introduction," *U.S. Dept. Agr. Bur. Ent., Techn. Ser.* No. 19, Pt. 4, 1916.
 Rayment, Tarlton: *A Cluster of Bees*.

ERRATA

- In *Vic. Nat.*, May 1947, p. 9, first line of last par.—For "*Conserv. and Jard.*" read *Conserv. et Jard.*
Ditto, p. 15, last line of par. 4—For "*A. aulacarpa.*" read *A. aulacocarpa.*
Ditto, p. 16, second line of par. 4—For "*Erythphlæum, Laboucheri.*" read *Erythrophlæum Laboucheri.*